DEPARTMENT OF DEFENSE

Training Guide Supplement MB

to

The Management of Value Engineering Programs
in Defense Contracts

INSTRUCTOR'S NOTES FOR CASE PROBLEMS IN THE CONTRACTUAL ASPECTS OF VALUE ENGINEERING

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FOREWORD

This Supplement contains answers, notes, and charts for the nine case problems on the contractual aspects of value engineering, which are presented in Chapter 5 of the DoD Training Guide for the Management of Value in Defense Contracts. Engineering Programs. These notes are based upon interpretation of Revision 3, dated 15 November 1963, of Part 17 of Section 1 of the Armed Services Procurement Regulation.

CASE PROBLEM NO. 1 - SOLUTION

Reduction in unit test cost	$ 500	
Gross cost reduction for ten units		$ 5,000
Fabrication cost of test stand modification	$ 3,000	
Total implementation cost		$ 3,000
Net cost reduction		2,000
Sharing Factor		50%
Contractor's Share of the Cost Reduction		$ 1,000
Original contract price		$110,000
Government's share of the cost reduction		1,000
Revised contract price		$109,000

CASE PROBLEM NO. 2 - SOLUTION

a) Reduction in unit fabrication cost	$ 500	
Gross cost reduction for ten units		$ 5,000
Total implementation cost		3,000
Net ost Reduction		$ 2,000
Sharing Factor		50%
Contractor's Share of the Cost Reduction		$ 1,000
Original target cost	$100,000	
Less net cost reduction	2,000	
Revised target cost		$ 98,000
Target profit	$ 10,000	
Contractor's Share of Cost Reduction	+1,000	
Revised target profit		$ 11,000
Revised target price		$109,000
b) Revised target cost	$ 98,000	
Original ceiling formula	125%	
	$122,500	
Contractor profit adjustment	1,000	
Revised Ceiling Price		$123,500

Divide the revised ceiling price by $98,000 to compute the revised ceiling limitation of 126 percent.

c) Erroneous answers on the revised ceiling price may be as follows:

(1) $126,000 (128.6 percent)

The student adjusted the original ceiling price rather than the revised ceiling price.

(2) $123,000 (125.5 percent)

The student retained the target-ceiling spread in terms of absolute dollars from the original contract.

(3) $122,500 (125 percent)

The student retained the target-ceiling spread in terms of the original contract percentage.

The class should note that the use of a sharing formula in an incentive contract which differs from the maximum over-all cost incentive pattern of the contract is predicated upon a reasonable certainty that the cost savings can be accurately estimated. Otherwise, the sharing formula should be in accordance with the maximum over-all cost incentive pattern of the contract.

d) See graphic presentation in Figure S-1.

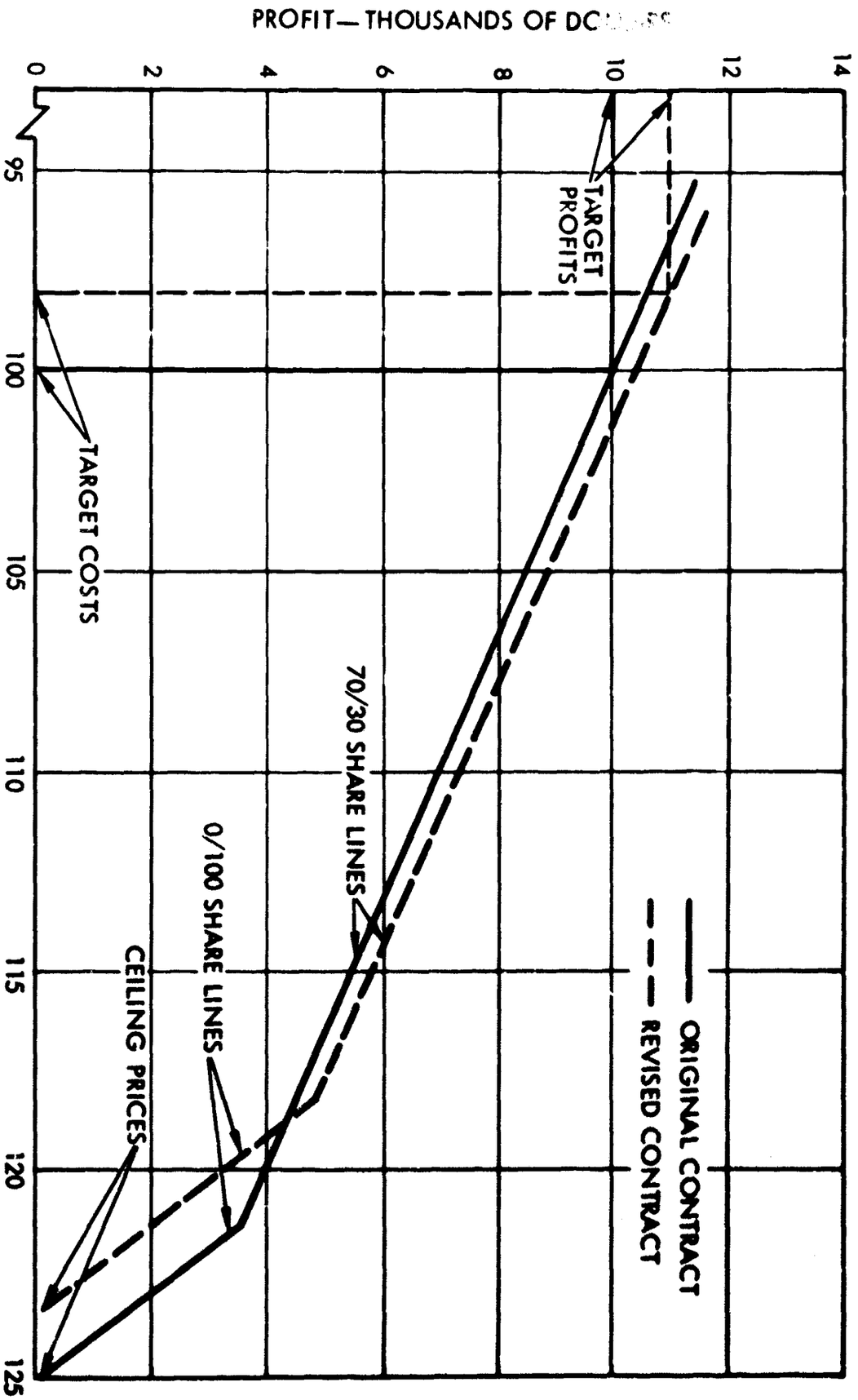

Figure S-1. Problem No. 2—(See Supplement MB)

CASE PROBLEM NO. 3 - SOLUTION

a) Gross cost reduction	$ 30,000	
Total implementation cost	1,000	
Net cost reduction		$ 29,000
Sharing Factor		50%
Contractor's share of cost reduction		$ 14,500
Original target cost	$1,000,000	
Net cost reduction	29,000	
Revised target cost		$971,000
b) Original minimum fee	$ 40,000	
Contractor's share of cost reduction	14,500	
Revised minimum fee		$ 54,500
Original target fee	$ 80,000	
Contractor's share of cost reduction	14,500	
Revised target fee		$ 94,500
Original maximum fee	$120,000	
Contractor's share of cost reduction	14,500	
Revised maximum fee		$134,500

c) See graphic presentation in Figure S-2.

d) One possible solution is a revised target cost of $971,000 with the original fee structure remaining unchanged. The emphasis on this portion of the problem is the comparison with the results obtained with the value engineering clause.

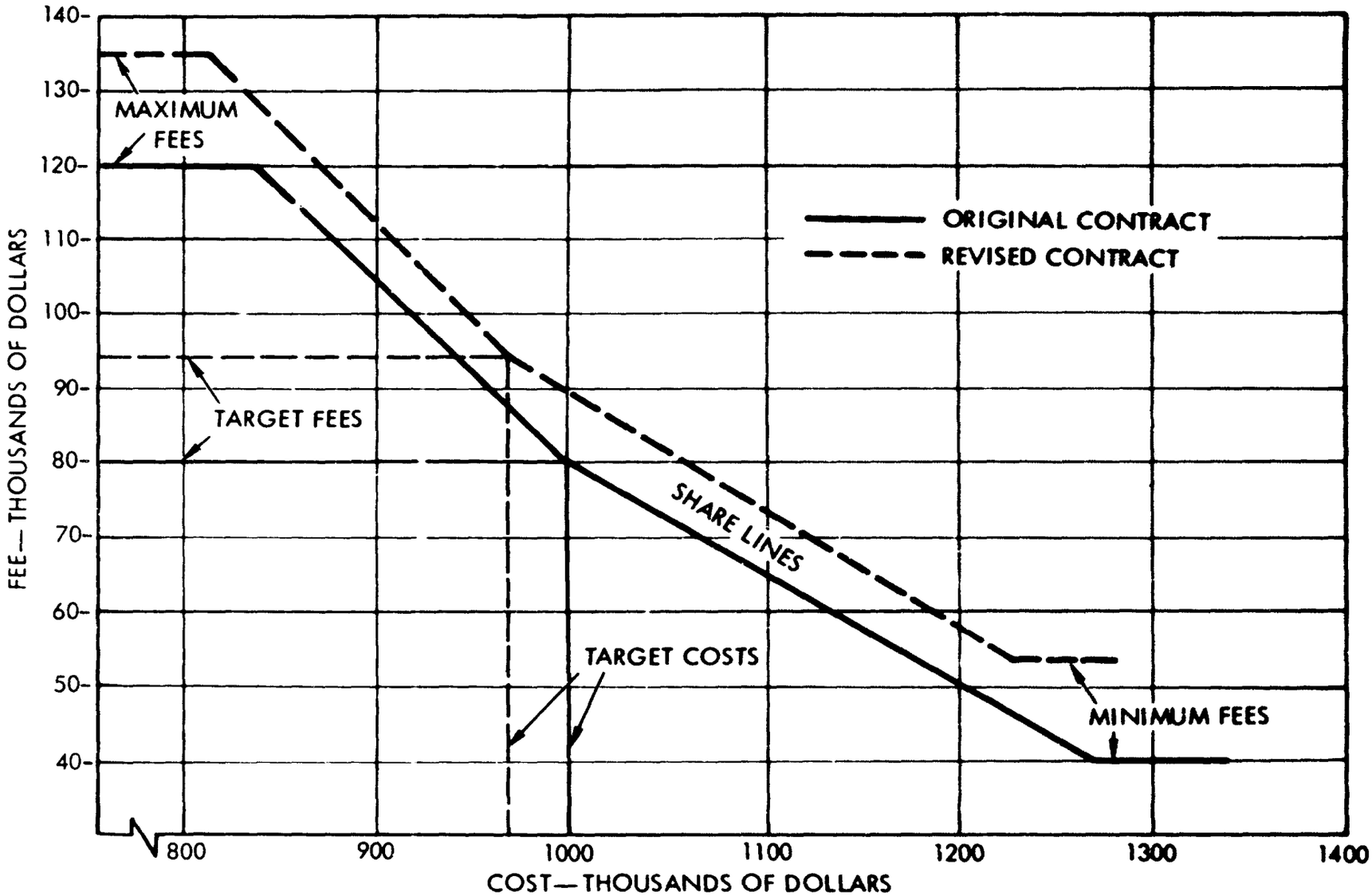

Figure S-2. Problem No. 3—(See Supplement MB)

CASE PROBLEM NO. 4 - SOLUTION

a) Gross cost reduction	$ 30,000	
Total implementation cost	1,000	
Net cost reduction		$ 29,000
Sharing Factor		25%
Contractor's Share of Cost Reduction		$ 7,250
Original target cost	$1,000,000	
Net cost reduction	29,000	
Revised target cost		$971,000
b) Original minimum fee	$ 40,000	
Contractor's share of cost reduction	7,250	
Revised minimum fee		$ 47,250
Original target fee	$ 80,000	
Contractor's share of cost reduction	7,250	
Revised target fee		$ 87,250
Original maximum fee	$120,000	
Contractor's share of cost reduction	7,250	
Revised maximum fee		$127,250

c)

	Original Contract	Problem 3 50% Share	Problem 4 25% Share
Target cost	$1,000,000	$971,000	$971,000
Target fee	80,000	94,500	87,250
Minimum fee	40,000	54,500	47,250
Maximum fee	120,000	134,500	127,250

CASE PROBLEM NO. 5 - SOLUTION

Net cost reduction	$ 8,000	
Sharing Factor	10%	
Contractor's share of cost reduction		$ 800
Original fixed fee	$ 70,000	
Contractor's share of cost reduction	800	
Revised fixed fee		$ 70,800

CASE PROBLEM NO. 6 - SOLUTION

a) Original target cost	$1,000,000	
Net cost reduction	15,000	
Revised target cost		$985,000
b) Net cost reduction	$ 15,000	
Sharing Factor	20%	
Contractor's share of cost reduction		$ 3,000
Original minimum fee	$ 40,000	
Contractor's share of cost reduction	3,000	
Revised minimum fee		$ 43,000
Original target fee	$ 80,000	
Contractor's share of cost reduction	3,000	
Revised target fee		$ 83,000
Original maximum fee	$ 120,000	
Contractor's share of cost reduction	3,000	
Revised maximum fee		$123,000

CASE PROBLEM NO. 7 - SOLUTION

The intent of this problem is to develop the trainee's awareness of the distinction between the data rights acquired by the Government under the "Value Engineering Incentive" clause as compared to the rights of the Government under the "Value Engineering Program Requirement" clause.

Some of the points which the class should develop are:

a) The contractor has a right to restrict the data under the "Value Engineering Incentive" clause.

b) The contractor's right to restrict data under the "Value Engineering Incentive" clause is valid until the Government accepts the proposal by the issuance of a contract change notice or order.

c) The contractor does not have the right to restrict data submitted under the "Value Engineering Program Requirement" clause. The Government may use submitted data, including value engineering change proposals, "...in any manner and for any purpose...", whether accepted or not.

CASE PROBLEM NO. 8 - SOLUTION

a) Subcontractor's estimated gross cost reduction		$ 25,000
Subcontractor's cost of implementation		500
Net subcontract cost reduction		24,500
Contractor's cost of implementation		4,000
Subcontract value engineering base		20,500
Subcontract sharing factor		60%
Subcontractor's share of cost reduction		$ 12,300
Original subcontract price		$ 450,000
Less value engineering reduction		8,200
Revised subcontract price		441,800

b) Gross cost reduction		25,000
Subcontract implementation cost	$ 500	
Contractor implementation cost	4,000	
Subcontractor share of cost reduction	12,300	
Contractor value engineering base		8,200
Contractor sharing factor		75%
Contractor share of cost reduction		$ 6,150
Original contract price		$10,000,000
Government's share of cost reduction		2,050
Revised contract price		$ 9,997,950

Recapitulation

Subcontract implementation	$ 500
Subcontract sharing	12,300
Contractor implementation	4,000
Contractor sharing	6,150
Government sharing	2,050
	$ 25,000

c) The contract price to Dynamic Motors would remain $10, 000, 000. Kalamazoo Motors would retain the $20, 500 net saving.

c) (1) The contractor and subcontractor could proceed to submit the change proposal again. Authority for its submission would be the portion of the clause which states that "Cost Reduction proposals submitted under the provisions of any other contract also may be submitted under this contract...". If accepted, the contractor and subcontractor would share in the savings.

(2) The trainee's discussion should indicate that the unit price of the trucks would probably be $25 less than the original price. That is, the Government would obtain the total benefit of the previous cost reduction proposal.

CASE PROBLEM NO. 9 - SOLUTION

Original Material Cost	$13.04	
Increased cost	.10	
Revised Material Cost		$ 13.14
Material Handling at 10 percent		1.31
Labor:		
Assembly 41 minutes per unit at 90 percent efficient at $2.40 per man-hour		1.80
Test		1.00
Burden at 175 percent		4.90
Original industrial engineering		.20
Original engineering burden		.20
Additional industrial engineering - 100 hours at $4.00/10,000		.04
Additional engineering burden		.04
Subtotal		$ 22.63
Previous subtotal		22.83
Net cost reduction per unit		.20
Total cost reduction for 10,000		2,000.00
Sharing Factor		60%
Contractor's share of cost reduction		$1,200.00
Original Contract Price		$ 262,500
Government's share of cost		800
Revised Contract Price		$ 261,700